

CLAIMS

1. A battery pack comprising: a rechargeable battery (2) including a safety vent (20) by forming a release opening (20a), for externally releasing internal abnormal pressure of a battery case (22), on a metal sealing plate (23) sealing an open end of the battery case accommodating elements for electromotive force; and a substrate (3), having external terminals (6) thereon, being provided above the sealing plate (23); the rechargeable battery (2) and the substrate (3) being integrated by a resin molding (11) filled and molded between the sealing plate (23) and the substrate (3), wherein the resin molding (11) is molded with filled resin and forms an operating space (49) for the safety vent (20) therein.

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2. The battery pack according to claim 1, wherein the safety vent (20) is a clad vent structure which is formed by closing the release opening (20a) with a foil-like material at its side facing the inner side of the battery case (20).

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3. The battery pack according to claim 1, wherein the operating space (49) is formed and opens to outer surface.

4. The battery pack according to claim 1, wherein an opening portion (112) connecting through the operating space (49) is formed on the substrate (3).

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5. The battery pack according to claim 1, wherein a porous material (40, 40a, 111) is provided to inside of the operating space (49).

5 6. The battery pack according to claim 1, wherein the release opening (20a) of the safety vent (20) of the sealing plate (23) is covered by a sheet-like member (40, 40a) prior to the resin filling.

10 7. The battery pack according to claim 6, wherein the sheet-like member (40) is formed with its side surfaces being exposed to outer surface.

8. The battery pack according to claim 6, wherein the
15 sheet-like member (40, 40a) is made with a porous material.

9. The battery pack according to claim 3 or 7, wherein externally opening portions of the operating space (49) are covered with a covering sheet (13).

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10. The battery pack according to claim 1, further comprising a rubber-made sealing plug (120) having a stem portion (120b), and a lid portion (120a) being molded to extend a projected area of the release opening (20a) of the safety vent (20),
25 wherein the stem portion (120b) is press-fit into the release opening.

11. The battery pack according to claim 10, wherein a gap (120c), extending along the stem portion (120b) from its tip end to a stem base at the lid portion (120a), is formed and positioned between the release opening (20a) of the safety
5 vent (20) and the sealing plug (120).